

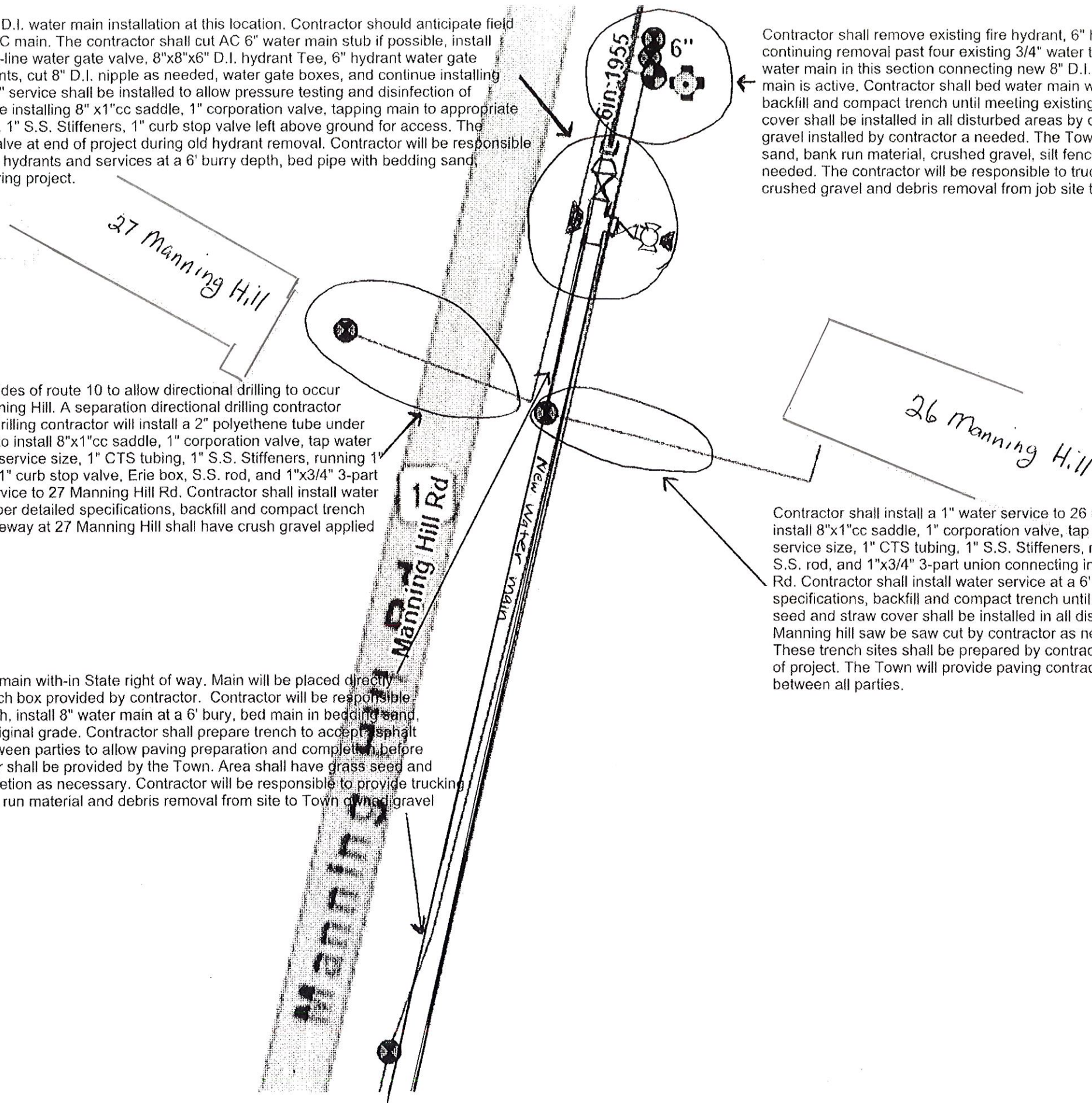
The Contractor shall start new 8" D.I. water main installation at this location. Contractor should anticipate field adjustments starting initial connection to 6" AC main. The contractor shall cut AC 6" water main stub if possible, install a 6" hymax coupling, 6"x8" D.I. reducer, 8" in-line water gate valve, 8"x8"x6" D.I. hydrant Tee, 6" hydrant water gate valve, 6' bury fire hydrant, mechanical restraints, cut 8" D.I. nipple as needed, water gate boxes, and continue installing 8" D.I. main. During this initial connection a 1" service shall be installed to allow pressure testing and disinfection of new 8" D.I. main by contractor that will include installing 8" x1"cc saddle, 1" corporation valve, tapping main to appropriate diameter to meet service size, 1" CTS tubing, 1" S.S. Stiffeners, 1" curb stop valve left above ground for access. The service will be turned off at the corporation valve at end of project during old hydrant removal. Contractor will be responsible to install new 8" D.I. main, water gate valves, hydrants and services at a 6' bury depth, bed pipe with bedding sand, compact trench and meet existing grades during project.

Contractor shall remove existing fire hydrant, 6" hydrant gate, hydrant Tee, 6" AC water main continuing removal past four existing 3/4" water taps. Contractor will install a new section of 6" water main in this section connecting new 8" D.I. main to existing 6" AC main once new 8" water main is active. Contractor shall bed water main with bedding sand per detailed specifications, backfill and compact trench until meeting existing grades. At completion grass seed and straw cover shall be installed in all disturbed areas by contractor. Disturbed driveways shall have crushed gravel installed by contractor as needed. The Town will provide the water main materials, bedding sand, bank run material, crushed gravel, silt fence, grass seed, straw for seed cover and paving as needed. The contractor will be responsible to truck materials need for bedding pipe, backfilling, crushed gravel and debris removal from job site to Town gravel pit.

Contractor will provide excavation on both sides of route 10 to allow directional drilling to occur for installation of 1" water service to 27 Manning Hill. A separation directional drilling contractor shall be provided by Town. The directional drilling contractor will install a 2" polyethene tube under route 10. Job contractor will be responsible to install 8"x1"cc saddle, 1" corporation valve, tap water main to appropriate diameter to meet water service size, 1" CTS tubing, 1" S.S. Stiffeners, running 1" CTS tube into provided 2" polyethene tube, 1" curb stop valve, Erie box, S.S. rod, and 1"x3/4" 3-part union connecting into existing 3/4" water service to 27 Manning Hill Rd. Contractor shall install water service at a 6' bury, bed with bedding sand per detailed specifications, backfill and compact trench until meeting existing grades. Disturbed driveway at 27 Manning Hill shall have crush gravel applied by contractor.

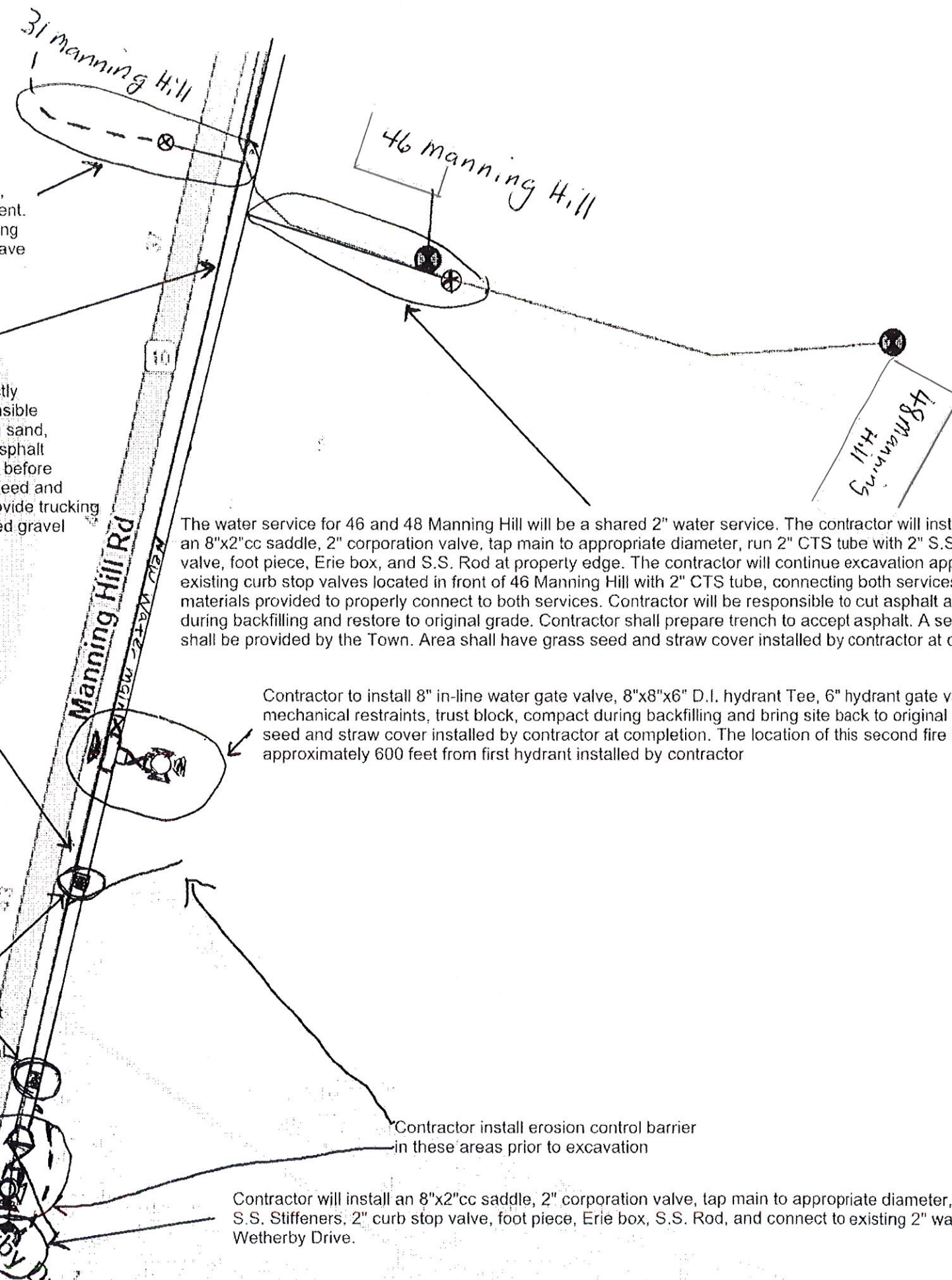
Contractor shall install a 1" water service to 26 Manning Hill. Job contractor will be responsible to install 8"x1"cc saddle, 1" corporation valve, tap water main to appropriate diameter to meet water service size, 1" CTS tubing, 1" S.S. Stiffeners, running 1" CTS tube, 1" curb stop valve, Erie box, S.S. rod, and 1"x3/4" 3-part union connecting into existing 3/4" water service to 26 Manning Hill Rd. Contractor shall install water service at a 6' bury, bed with bedding sand per detailed specifications, backfill and compact trench until meeting existing grades. At completion grass seed and straw cover shall be installed in all disturbed areas by contractor. Driveway at 26 Manning hill saw be saw cut by contractor as necessary to install water main and water service. These trench sites shall be prepared by contractor at a predetermined time for paving by the end of project. The Town will provide paving contractor and coordinate trench preparation and paving between all parties.

The contractor shall install 8" Ductile water main with-in State right of way. Main will be placed directly behind telephone poles to allow use of trench box provided by contractor. Contractor will be responsible to cut asphalt as necessary, excavate trench, install 8" water main at a 6' bury, bed main in bedding sand, compact during backfilling and restore to original grade. Contractor shall prepare trench to accept asphalt as necessary, the Town will coordinate between parties to allow paving preparation and completion before end of project. A separate paving contractor shall be provided by the Town. Area shall have grass seed and straw cover installed by contractor at completion as necessary. Contractor will be responsible to provide trucking to haul bedding sand, crushed gravel, bank run material and debris removal from site to Town gravel pit.



The water service for 31 Manning Hill will be directionally drill by contractor provided by the Town. The contractor shall preform excavation on both side of route 10 to allow directional drilling. 2" polyethylene tube will be installed during directional drilling. The contractor shall install a 8"x1"cc saddle, 1" corporation valve, tap main to appropriate service diameter, 1" cts tube through 2" polyethylene tube, 1" S.S. Inserts, 1" curb stop valve at property edge, Erie box and S.S. Rod. Contractor will continue excavation approximately 100 feet to the foundation wall of 31 Manning Hill, core a 2" hole through foundation wall, run 1" CTS tube from curb stop valve continuing into basement. Contractor will seal foundation wall with water plug material provided. Contractor shall compact during backfilling and bring site back to original grade. Topsoil will be provided as necessary. Area shall have grass seed and straw cover installed by contractor at completion.

The contractor shall install 8" Ductile water main with-in State right of way. Main will be placed directly behind telephone poles to allow use of trench box provided by contractor. Contractor will be responsible to cut asphalt as necessary, excavate trench, install 8" water main at a 6' bury, bed main in bedding sand, compact during backfilling and restore to original grade. Contractor shall prepare trench to accept asphalt as necessary, the Town will coordinate between parties to allow paving preparation and completion before end of project. A separate paving contractor shall be provided by the Town. Area shall have grass seed and straw cover installed by contractor at completion as necessary. Contractor will be responsible to provide trucking to haul bedding sand, crushed gravel, bank run material and debris removal from site to Town owned gravel pit.



The water service for 46 and 48 Manning Hill will be a shared 2" water service. The contractor will install an 8"x2"cc saddle, 2" corporation valve, tap main to appropriate diameter, run 2" CTS tube with 2" S.S. Stiffeners, 2" curb stop valve, foot piece, Erie box, and S.S. Rod at property edge. The contractor will continue excavation approximately 100 feet to existing curb stop valves located in front of 46 Manning Hill with 2" CTS tube, connecting both services in this location using materials provided to properly connect to both services. Contractor will be responsible to cut asphalt as necessary, compact during backfilling and restore to original grade. Contractor shall prepare trench to accept asphalt. A separate paving contractor shall be provided by the Town. Area shall have grass seed and straw cover installed by contractor at completion as necessary.

Contractor to install 8" in-line water gate valve, 8"x8"x6" D.I. hydrant Tee, 6" hydrant gate valve, 6' burry fire hydrant, mechanical restraints, trust block, compact during backfilling and bring site back to original grade. Area shall have grass seed and straw cover installed by contractor at completion. The location of this second fire hydrant will be approximately 600 feet from first hydrant installed by contractor

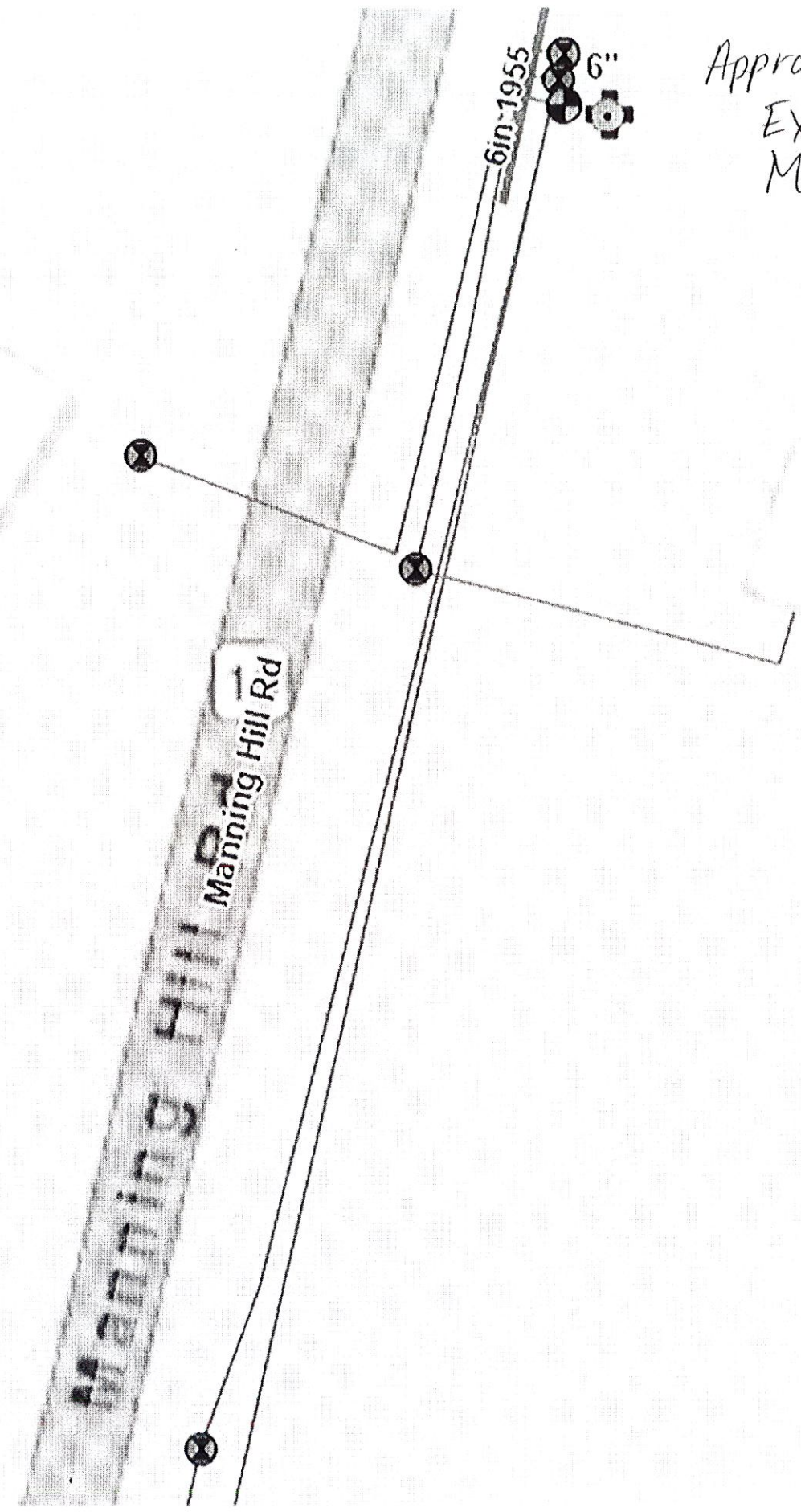
Contractor will provide excavation to allow directional drilling to occur in these two locations. Once directional drilling is complete, 8" HDPE pipe is in place contractor will connect 8" Ductile main to 8" HDPE main with provided MJ DI Bends and mechanical restraints to properly connect mains, trust block D.I. Bends as necessary, compact and backfill to original grades. Area shall have grass seed and straw cover installed by contractor at completion. The directional drilling in this location is approximately 200 feet of 8" HDPE pipe.

Contractor will install 8"x6" D.I. reducer, 6" hydrant gate valve, 6' burry fire hydrant, provided mechanical restraints and trust block. Area of excavation for new 8" main, water service to Wetherby Drive, and hydrant shall be compacted during backfilling, restored to original grade. Necessary gravel and or topsoil will be provided by town. This location is approximately 1,100 feet from existing 6" AC water main or starting location.

Contractor will install an 8"x2"cc saddle, 2" corporation valve, tap main to appropriate diameter, run 2" CTS tube with 2" S.S. Stiffeners, 2" curb stop valve, foot piece, Erie box, S.S. Rod, and connect to existing 2" water service feeding Wetherby Drive.

Contractor install erosion control barrier in these areas prior to excavation

Approximate Layout of
Existing Water Utilities
Manning Hill Rd.



31

Approximate Layout of
Existing Water Utilities
Manning Hill Rd.

46

48

Manning Hill Rd

Wetherby Dr

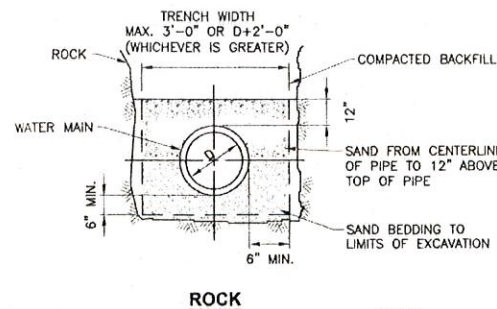
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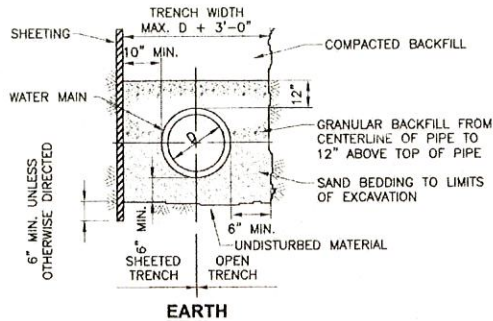
ROCK

NOTES:

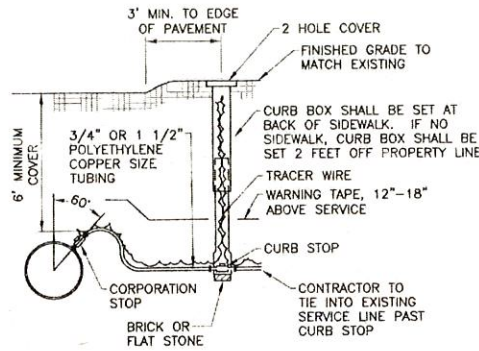
1. CONTRACTOR SHALL MAINTAIN A MINIMUM COVER OF 6'-0" FROM THE TOP OF PIPE.

TYPICAL WATER MAIN TRENCH SECTIONS

SCALE: NONE



EARTH

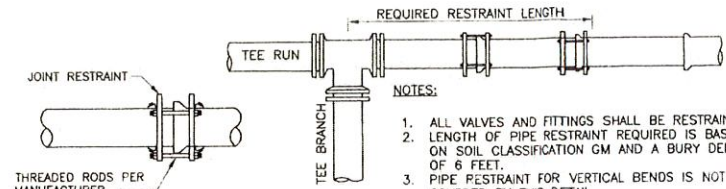


NOTES:

1. SERVICES 1-INCH AND GREATER IN D.I. MAINS WITH A DIAMETER OF 12-INCHES OR GREATER SHALL BE DIRECT TAP.
2. TRACER WIRE NOT APPLICABLE TO PULLED OR PUSHED SERVICES.

SERVICE CONNECTION (POLY)

SCALE: NONE



NOTES:

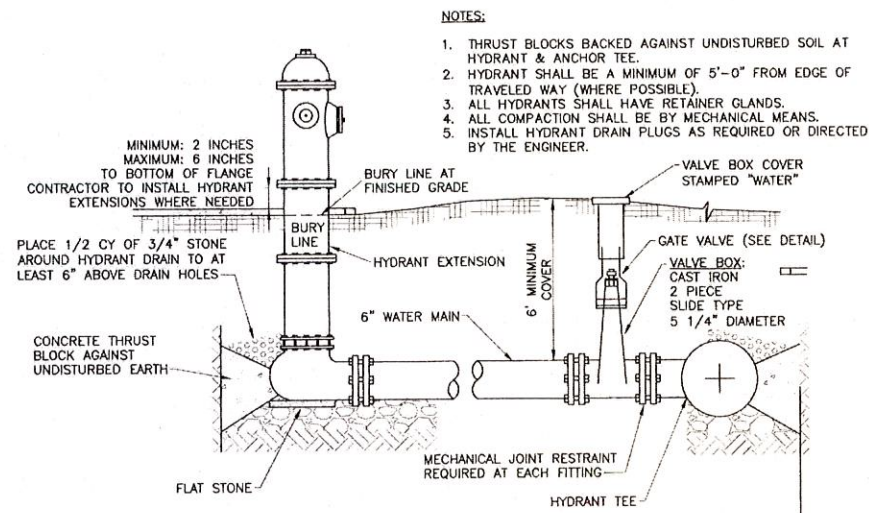
1. ALL VALVES AND FITTINGS SHALL BE RESTRAINED.
2. LENGTH OF PIPE RESTRAINT REQUIRED IS BASED ON SOIL CLASSIFICATION GM AND A BURY DEPTH OF 6 FEET.
3. PIPE RESTRAINT FOR VERTICAL BENDS IS NOT COVERED BY THIS DETAIL.
4. ALL JOINTS THAT FALL WITHIN THE REQUIRED RESTRAINT LENGTH SHALL BE MECHANICALLY RESTRAINED.

PIPE SIZE (IN)	1/4 BEND (90°)	1/8 BEND (45°)	1/16 BEND (22°)	PLUG/TEE	TEE* (2)	TEE* (5)	TEE* (10)	TEE* (15)	TEE* (20)
6"	12	5	3	21	18	10	1	1	1
8"	16	7	4	28	24	16	4	1	1
12"	22	10	5	40	37	28	16	4	1
16"	29	12	6	51	48	39	27	15	3
20"	37	16	8	67	78	65	45	25	4
24"	43	18	9	103	93	81	60	39	16
36"	59	25	12	144	136	123	101	79	58

*The values in parenthesis (X) indicate the required restraint length for each side of the Tee Run. The values in the column are the required restraint length for the Tee Branch.

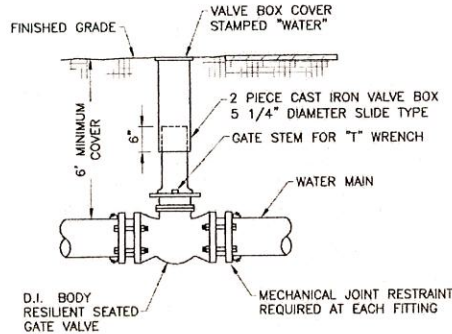
MECHANICAL JOINT RESTRAINT

SCALE: NONE



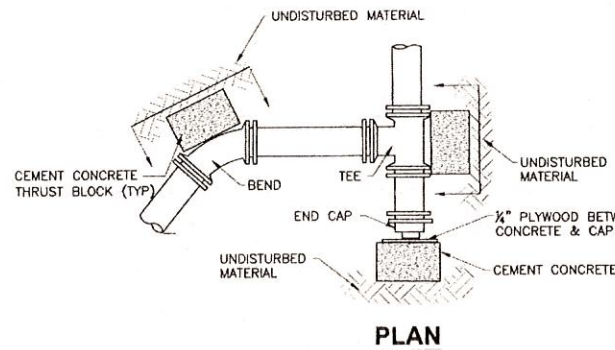
HYDRANT UNIT DETAIL

SCALE: NONE



GATE VALVE

SCALE: NONE



PLAN

CONCRETE BACKING

SCALE: NONE

PIPE SIZE (IN)	1/4 BEND (90°)	1/8 BEND (45°)	1/16 BEND (22°)	PLUG/TEE
6"	6.0	3.0	2.5	4.5
8"	9.0	5.0	2.5	6.5
12"	13.3	6.7	3.7	9.6
16"	24.0	11.8	3.7	17.0
20"	26.2	14.2	7.2	18.5
24"	35.0	16.0	10.0	25.0
36"	85.0	46.0	23.4	60.7

NOTES:

1. CONCRETE SHALL BE 3,000 PSI MINIMUM AT 28 DAYS.
2. THRUST BLOCKS SHALL BE PLACED AGAINST UNDISTURBED MATERIAL WHENEVER POSSIBLE.
3. ALL FITTINGS SHALL BE SUPPORTED IN CONCRETE.
4. FOR FIRE HYDRANT THRUSTING SEE HYDRANT DETAIL.
5. SEE VERTICAL BEND DETAIL FOR RESTRAINED PIPE REQUIREMENTS FOR VERTICAL BENDS.
6. POURED CONCRETE NOT TO COME WITHIN 6" OF MECHANICAL JOINTS.
7. BEARING FACE AREA CALCULATED ASSUMING 250 PSI AND 1.5 TON/S.F. ALLOWABLE SOIL BEARING CAPACITY.

EROSION & SEDIMENT CONTROL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND REPAIR OF ALL EROSION CONTROL DEVICES ON-SITE. ALL EROSION CONTROL DEVICES SHALL BE REGULARLY INSPECTED. ANY SEDIMENTS REMOVED FROM THE CONTROL DEVICES SHALL BE DISPOSED OF ON THE UPLAND SIDE OF THE EROSION CONTROL LINE.
2. IN THE STAGING AREA, THE CONTRACTOR SHALL HAVE A STOCKPILE OF MATERIALS REQUIRED TO CONTROL EROSION ON-SITE TO BE USED TO SUPPLEMENT OR REPAIR EROSION CONTROL DEVICES. THESE MATERIALS SHALL INCLUDE, BUT ARE NOT LIMITED TO, HAY BALES, SILT FENCE AND CRUSHED STONE.
3. IF A STOCKPILE IS LOCATED ON A SLOPE, THE RUNOFF SHALL BE DIRECTED AWAY FROM THE PILE. STOCKPILES SHALL BE CONTAINED WITHIN STRAW DIKES.
4. AT NO TIME SHALL SILT-LADEN WATER BE ALLOWED TO ENTER SENSITIVE AREAS (WETLANDS, OFF-SITE AREA AND DRAINAGE SYSTEMS). ANY RUNOFF FROM DISTURBED SURFACES SHALL BE DIRECTED THROUGH SETTLING BASINS AND EROSION CONTROL BARRIERS PRIOR TO ENTERING ANY SENSITIVE AREAS.
5. NO MATERIALS SHALL BE DISPOSED OF INTO ANY WETLANDS OR EXISTING OR PROPOSED DRAINAGE SYSTEMS.
6. ANY REFUELING OF CONSTRUCTION VEHICLES AND EQUIPMENT SHALL TAKE PLACE OUTSIDE OF ANY 100-FOOT BUFFER ZONE TO ANY WETLANDS.
7. CONTRACTOR SHALL UTILIZE A VARIETY OF SLOPE STABILIZATION METHODS AND MATERIALS, WHICH SHALL BE ADJUSTED TO THE SITE CONDITIONS. EROSION CONTROL BLANKETS OR MIRAFI MIRAMAT (OR SIMILAR PRODUCTS) SHALL BE AVAILABLE ON SITE.
8. WATER SHALL NOT BE ALLOWED TO ENTER PIPES FROM UNSTABILIZED SURFACES.
9. IF INTENSE RAINFALL IS ANTICIPATED, THE INSTALLATION OF SUPPLEMENTAL STRAW DIKES, SILT FENCES, OR ARMORED DIKES SHALL BE UTILIZED. ADDITIONAL TEMPORARY SETTLING BASINS ARE REQUIRED TO BE LOCATED WITHIN THE DISTRIBUTED AREA, TO MINIMIZE THE TRIBUTARY AREAS.

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF WINCHESTER. ALL EXCAVATION AND RESTORATION SHALL MEET TOWN SPECIFICATIONS.
2. A PORTION OF THE SITE IS LOCATED WITHIN A FLOOD ZONE.
3. THE CONTRACTOR SHALL ESTABLISH A STAGING AREA OUTSIDE OF THE 100-FOOT BUFFER ZONE OF WETLANDS, FOR THE OVERNIGHT STORAGE OF EQUIPMENT AND STOCKPILING OF MATERIALS. NO STORAGE OF GASOLINE, OIL OR OTHER FUEL OR HAZARDOUS MATERIALS IS PERMITTED WITHIN THE 100-FOOT BUFFER ZONE OF WETLANDS. STAGING AREA LOCATIONS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER.
4. STOCKPILES SHALL BE LOCATED AS NEEDED, WITHIN THE LIMIT OF WORK, IN AREAS OF MINIMAL IMPACT.
5. ALL HYDRANTS AND HYDRANT GATE VALVES SHALL BE REMOVED AND STACKED AT THE TOWN OF WINCHESTER WATER DEPARTMENT.
6. IF SEASON OR ADVERSE WEATHER CONDITIONS DO NOT ALLOW THE ESTABLISHMENT OF VEGETATION, TEMPORARY MULCHING WITH HAY, TACKIFIED WOOD CHIPS OR OTHER METHODS SHALL BE PROVIDED.
7. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES AND SHALL PROVIDE ALL NECESSARY CONTINUOUS BARRIERS OF SUFFICIENT TYPE, SIZE AND STRENGTH TO PREVENT ACCESS TO ALL OPEN EXCAVATIONS AT THE COMPLETION OF EACH WORK DAY.
8. THE CONTRACTOR AT HIS EXPENSE SHALL BRACE UTILITY POLES IF REQUIRED, AND REPAIR ANY DAMAGE TO EXISTING PAVING, SHRUBS, TREES, STONE WALLS, LAWNS, ETC. ALL EXCAVATED MATERIALS SHALL BE RETURNED TO EQUAL OR BETTER THAN PRIOR CONDITION BY THE CONTRACTOR.
9. ALL EXISTING ASPHALT PAVEMENT SHALL BE SAW-CUT PRIOR TO EXCAVATION IN ORDER TO PROVIDE UNIFORM ASPHALT REPLACEMENT.
10. REMOVAL AND DISPOSAL OF MATERIALS INCLUDING, BUT NOT LIMITED TO, ANY ASBESTOS CEMENT PIPE DEEMED NECESSARY TO REMOVE AND CONTAMINATED SOIL SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

SURVEY NOTES

2. THE LOCATION OF THE EXISTING UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE AND ARE INTENDED ONLY TO ADVISE THE CONTRACTOR OF THEIR PRESENCE. CALL "DIG SAFE" (1-888-344-7233) FOR FIELD LOCATIONS OF ALL EXISTING UTILITIES.

ABBREVIATIONS

PVC	POLYVINYL CHLORIDE
A.C.	ASBESTOS CEMENT
TYP.	TYPICAL
UP	UTILITY POLE
ELEV.	ELEVATION
ABND.	ABANDONED
PE	POLYETHYLENE

LEGEND

EXISTING	DESCRIPTION	PROPOSED
— W —	WATER MAIN	— W —
— W —	WATER SERVICE	— W —
— W —	GATE VALVE	— W —
— W —	SOLID SLEEVE	— W —
— W —	PIPE FITTINGS	— W —
— W —	CAP	— W —
— W —	REDUCER	— W —
— W —	FIRE HYDRANT	— W —
— W —	CURB STOP	— W —
— W —	ELEC. OH. WIRE	— W —
— W —	UTILITY POLE	— W —
— W —	TREE LINE	— W —
— W —	TREE	— W —
— W —	SHRUB	— W —
— W —	SHRUB LINE	— W —
— W —	2' CONTOUR	— W —
— W —	STONE WALL	— W —
— W —	SILT FENCE	— W —
— W —	PROPERTY LINE	— W —
— W —	STATIONING	— W —
— W —	CHECK DAM	— W —
— W —	ROAD SHOULDER	— W —
— W —	GRAVEL DRIVE	— W —
— W —	GRAVEL ROAD	— W —
— W —	PAVED ROAD	— W —
— W —	BORING/PROBE	— W —
— W —	100 YR. FLOOD ZONE	— W —
— W —	METER PIT	— W —
— W —	SEWER CLEANOUT	— W —
— W —	CATCH BASIN	— W —
— W —	SILT SACK AND CATCH BASIN	— W —
— W —	CENTER OF ROAD	— W —
— W —	LIMIT OF WORK	— W —

DETAIL SHEET

TOWN OF WINCHESTER
NEW HAMPSHIRE
Manning Hill ROAD WATER MAIN

THIS DRAWING IS THE PROPERTY OF TOWN OF WINCHESTER, NEW HAMPSHIRE. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF THE TOWN OF WINCHESTER.

Description

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